

## PATENT ABSTRACTS OF JAPAN

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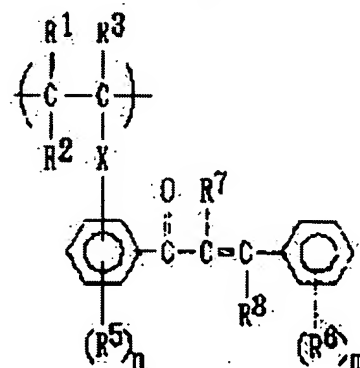
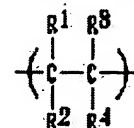
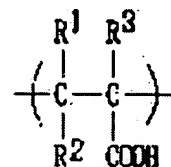
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## (54) REFLECTION PREVENTING FILM AND RESIST PATTERN FORMING METHOD

## (57)Abstract:

PURPOSE: To enhance antihalation effect, to prevent sublimation of a radiation absorbing material in a reflection preventing film and occurrence of intermixing, and to obtain superior heat resistance by incorporating a copolymer having at least each one kind of specified repeating unit.

CONSTITUTION: The reflection preventing film contains at least one kind of repeating unit represented by formulae I-III in which each of R1-R3 is, independently, H or an organic group and R1>R2 in formula II; R4 is an organic group having an epoxy group; X is a divalent group; each of R5 and R6 is, independently, H, OH, halogen, or amino; each of R7 and R8 is, independently, an organic group; and each of n and m is an integer.



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3. In the drawings, any words are not translated.

## CLAIMS

[Claim(s)]

[Claim 1] An antireflection film characterized by containing a copolymer which has one or more sorts of repeating units expressed with a repeating unit expressed with the following type (1), a repeating unit expressed with the following type (2), and the following type (3), respectively.

[Formula 1]



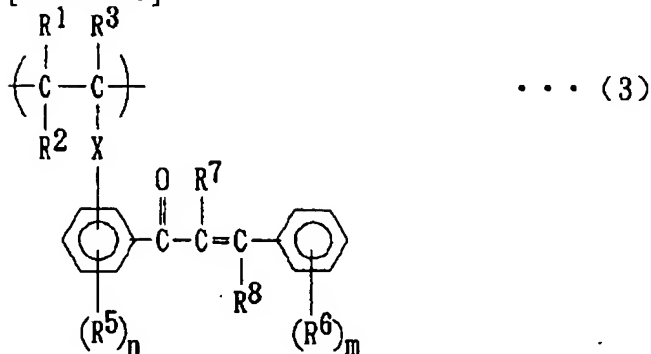
In [type (1), R<sup>1</sup>, R<sup>2</sup>, and R<sup>3</sup> may be mutually the same, or they may differ from each other, and show a hydrogen atom or an organic radical. ]

[Formula 2]



In [type (2), R<sup>1</sup>, R<sup>2</sup>, and R<sup>3</sup> may be mutually the same, or you may differ, a hydrogen atom or an organic radical is shown, and R<sup>4</sup> shows an epoxy group content organic radical. ]

[Formula 3]



In [type (3), R<sup>1</sup>, R<sup>2</sup>, and R<sup>3</sup> may be mutually the same, or they may differ. A hydrogen atom or an organic radical is shown and it is X. A divalent radical or single bond is shown. R<sup>5</sup> and R<sup>6</sup> may be mutually the same, or they may differ. A hydrogen atom, a halogen atom, a hydroxyl group, the amino group, a nitro group, or an organic radical is shown, R<sup>7</sup> and R<sup>8</sup> may be mutually the same, or you may differ, a hydrogen atom, a halogen atom, the amino group, or an organic radical is shown, n is the integer of 1-4, and m is the integer of 1-5. ]

[Claim 2] A formation method of a resist pattern which in forming a resist pattern by applying a resist,

forming a resist film on a substrate, irradiating radiation on this resist film at a predetermined pattern configuration, and subsequently developing negatives is beforehand characterized by forming a resist film after forming an antireflection film according to claim 1 on a substrate.

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